National Institute of Environmental Health Sciences

Detection and modelling of case clusters for urban leptospirosis

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Abstract:

OBJECTIVE: To analyse the epidemiological profile of 488 cases of leptospirosis in Rio de Janeiro, Brazil between 1997 and 2002, using a variety of methods of spatial epidemiology, to establish alert guidelines in general hospitals, which might be a tool to improve diagnosis and treatment of leptospirosis to reduce lethality rates. METHODS: Scan statistics identified six space-time clusters, which comprised a range of 2 to 28 cases per cluster. Generalized linear mixed models were used to evaluate risk factors for a cluster case which incorporated individual characteristics and spatial information on environmental and climactic factors in a single model frame. RESULTS: Cluster case events were associated with heavy rainfall (OR 3.71; 95% CI 1.83-7.51). The model did not identify socioeconomic or environmental covariates that significantly influence the risk of developing a cluster rather than non-cluster case. CONCLUSION: Clustering of leptospirosis in this urban setting appears to be due to transmission during heavy rainfall.

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Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Health Professional

Exposure :

weather or climate related pathway by which climate change affects health

Extreme Weather Event

Extreme Weather Event: Flooding

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Central/South America

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Leptospirosis

Medical Community Engagement: ☑

resource focus on how the medical community discusses or acts to address health impacts of climate change

A focus of content

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Low Socioeconomic Status, Workers

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content